REMARKS

Applicant respectfully objects to item 3 of the Office Action regarding Oath/Declaration and respectfully asserts that the submitted Declaration is not defective under 37 CFR 1.76 and MPEP 602.01 and 602.02. According to MPEP 602.01, an oath or declaration is defective it is has been altered in any manner after it has been signed. In the present case the second inventor noticed the title Dr. before his name and crossed it out before signing the declaration. Therefore the present Declaration does not violate the requirements of a valid Declaration. Under the same section 602.01, a new Declaration is required if the wording of the Declaration is incorrect, or the required affirmations have not been made or if the Declaration had not be properly subscribed to. The title Dr. pertains neither to the working of the Declaration nor to the required affirmation nor to the subscription and, therefore, does not render the Declaration defective within the meaning of MPEP 602.01 and 602.01. Moreover, 37 CFR 1.76 states that the required applicant's information includes the name, residence, mailing address, and citizenship of each applicant. The name of each applicant must include the family name, and at least one given name without abbreviation together with any other given name or initial. As follows from this section, whether an inventor is a Dr. or not is not relevant for the Declaration at all. Withdrawal of the objection to the Declaration is hereby requested.

With regard to the objections to the drawings, the specification was amended to incorporate numeral reference 33 (item 5 in the Office Action). With regard to item 6 of the Office Action, claim 14 has been cancelled, therefore the objection is now moot.

With regard to item 8 of the Office Action, Applicant submits a substitute specification in which most of the description previously contained in the SUMMARY OF THE INVENTION section has been moved to the DETAILED DESCRIPTION OF THE INVENTION section.

Claims 1-18 were rejected under 35 USC 112 first paragraph. Claims 1-3, 8-10, 16-18 are amended, Claims 19-20 are new. Claims 5-7, 11-15 are cancelled.

The amended claims address the problem with double confocal microscopes in that the expected high resolution is achieved if the two objectives have the focus at the same point for both beam path. According to manufacturing tolerances, each objective, even from the same class, has slightly different optical properties. The different optical properties are well known and can be characterized as follows: spherical aberration, astigmatism, coma, field curvature,

chromatic aberration and distortion (see attached copies from a book *Lichtmikroskopie*, first edition published in 1994). On page 12 paragraph 1 of the specification it is stated that the optical properties of the objective are coordinated with one another so that the theoretically achievable resolution is reached. As mentioned above, each objective has different aberrations which can be measured or are theoretically known from the known design of the objective. According to such data, theoretical resolution is knowingly calculated. The present invention has recognized that it is important to coordinate the chromatic aberrations of the optical components in a way that the high resolution can be achieved, as claimed in amended independent Claim 1.

Applicant respectfully points out that the objectives for a double confocal microscope have to be selected in a way that the optical properties or their inherent aberration are the same. For a double confocal microscope, high quality objectives are hand selected to have approximately identical optical properties. As mentioned in the specification (page 3, last paragraph), the correction is done with respect to the optical axis and/or with respect to at least one surface in the specimen region. It is believed that independent claim 1 as amended and its dependent claims are now incompliance with section 112 first paragraph. Withdrawal of this rejection is therefore respectfully requested. It is also believed that the claims as amended are in compliance with the requirements of section 112 second paragraph.

Claims 1-2, 7-13 were rejected under 35 USC 102(b) as being anticipated by Hell (EP 491 289). Claims 1-2, 4, and 6-13 were rejected under 35 USC 102(b) as being anticipated by Schoppe (DE 18 412). It is respectfully submitted that the pending claims as amended are now not anticipated by the cited references. Page 12 of the specification of the present application describes using a laser at illumination wavelengths of 488nm, 567nm and 647nm. Consequently, the objectives used have to be chromatically corrected as claimed in amended independent claim 1. Nothing was mentioned in the Hell disclosure that the microscope objectives (13 and 14) and the other components (such as lenses 6) and the beam splitter (10) have to be chromatically corrected in the way claimed in amended independent claim 1. Similarly, the Schoppe reference does not anticipate amended Claim 1 of the present application. Therefore, withdrawal of the 102(b) rejections is respectfully requested. Allowance of the pending claims as amended is respectfully requested.

CONCLUSION

In accordance with 37 CFR 1.21 (c)(1)(ii) a marked up version of the specification is attached as Appendix A and claims is attached as Appendix B to this response. Also attached is a Substitute Specification incorporating specification amendments. No new matter has been added by these amendments to the specification. For the foregoing reasons, Applicant believes this application is in condition for allowance which is respectfully requested.

Respectfully submitted,

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APPENDIX A

VERSION WITH MARKINGS TO SHOW CHANGES MADE

In the specification:

Paragraph beginning at page 2, line 8 has been amended as follows:

The method according to the present invention of the generic type achieves the aforesaid object by confocal scanning microscope which comprises: at least one light source defining an illuminating beam path, at least one detector defining detection beam path, a plurality of components arranged in the illuminating beam path and the detection beam path wherein the optical properties of the components arranged in the beam path are coordinated with one another and the accumulated aberrations, with respect to the optical axis 33 and/or at least one surface in the specimen region, are at least of the order of magnitude of the theoretically achievable resolution capability.

The following paragraph and title beginning at page 10, lines 22-27 through page 11, lines 1-4 should be moved to page 3, beginning at line 25:

BRIEF DESCRIPTION OF THE DRAWINGS

There are various ways of advantageously embodying and developing the teaching of the present invention. In conjunction with the explanation of the preferred exemplary embodiments of the invention with reference to the drawings, an explanation is also given of generally preferred embodiments and developments of the teaching. In the drawings:

FIG. 1 schematically depicts an exemplary embodiment of a double confocal scanning microscope according to the present invention; and

FIG. 2 schematically depicts two chromatically selective components in the detected beam path of a double confocal scanning microscope.

DETAILED DESCRIPTION OF THE INVENTION

APPENDIX B

In the claims:

Claims 5-7, 11-15 have been canceled.

Claims 1-3, 8-10, 16-18 were amended as follows, Claims 19-20 are new:

1.(Amended) A double confocal scanning microscope [(1)] comprising: [having]

at least one light source [(3)] defining an illuminating beam path [(2)] and emitting coherent light of a first, second and third wavelengths;

at least one detector [(5)] defining detection beam path [(4)];

[a plurality of components (6, 10, 13, 14)] two microscope objectives disposed along an optical axis and defining a first, second and third planes, a beam splitter, and a lens arranged in the illuminating beam path [(2)] and the detection beam path [(4)],

wherein the two microscope objectives, the beam splitter and the lens [optical properties of the components (6, 10, 13, 14)] cause the light of the first wavelength to be focused by the two microscope objectives on the first plane, the light of the second wavelength to be focused by the two microscope objectives on the second plane, and the light of the third wavelength to be focused by the two microscope objectives on the third plane, therefore reducing longitudinal chromatic aberrations of the two microscope objectives [arranged in the beam path are coordinated with one another and the accumulated aberrations,]with respect to the optical axis [(33)] and/or at least one [surface (18, 19, 20) in the specimen region] plane out of the first, the second, and the third planes to the order [are at least] of magnitude of the theoretically achievable resolution capability of the microscope.

2.(Amended) The scanning microscope as defined in Claim 1, wherein [characterized in that] the longitudinal chromatic aberrations of the two microscope objectives are reduced with regard to the second plane [surface (19)], the second plane being [in the specimen region is] at least partially coincident with a [the] focal plane [(16)] of the two microscope objectives.

3.(Amended) The scanning microscope as defined in Claim 1, [characterized in that] wherein the second plane is symmetrically disposed between the first and the third planes [at least two

surfaces (18, 20) in the specimen region arranged symmetrically with respect to the focal plane (16) are defined].

8.(Amended) The scanning microscope as defined in Claim [7] 1, [characterized in] wherein [that correction] reduction of the chromatic aberrations occurs for the light of the first, second and third wavelengths selected from [is provided for] a wavelength range from about 200 nm to about 2000 nm.

9.(Amended) The scanning microscope as defined in Claim 1, [characterized in that the] wherein polarization properties of the [optical components] two microscope objectives disposed along an optical axis, a beam splitter, and a lens are coordinated with one another in such a way that the light of the first, second and third wavelengths is focused on the first, second and third plane accordingly .

10.(Amended) The scanning microscope as defined in Claim 1, [characterized in that] further comprising a detection pinhole and a dichroic beam splitter detecting the illumination beam path, wherein a position of at least [one optical component (17, 8)] the dichroic beam splitter or a position of at least the detection pinhole [is positionable] can be altered. .

16.(Amended) The scanning microscope as defined in Claim [11] 10, [characterized in that] wherein the detection pinhole [(17)] is embodied as at least one [a] chromatically selective component [(24, 25)].

17.(Amended) The scanning microscope as defined in Claim 16, [characterized in that] wherein at least one [corresponding] chromatically selective component [25, 25)] is provided for each detected wavelength region.

18.(Amended) The scanning microscope as defined in Claim 16, [characterized in that] further comprising a multi-band detector [(32) is arranged] disposed after the chromatically selective component (24, 25).

19. (New). The scanning microscope of Claim 1, wherein the first wavelength is about 488 nm, the second wavelength is about 567 nm, and the third wavelength is about 647 nm.

20.(New) The scanning microscope of Claim 1, wherein the theoretically achievable resolution capability of the microscope is about 100 nm.